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10/670,787

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Seung Jun Han

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EXAMINER

HAN, JASON

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/670,787 | Applicant(s) HAN ET AL. | |
| | Examiner JASON M. HAN | Art Unit 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed February 2, 2009 have been fully considered but they are not persuasive.
2. At present, the prior art to Van Duijneveldt (U.S. Patent 5,975,722 A) remains commensurate to the scope of the claims as stated by the Applicant within the context of the claim language and as broadly interpreted by the Examiner [MPEP 2111], which is elucidated and expounded upon below.
3. In response to Applicant's argument, "In Van Duijneveldt, lamps 4, 4', 4'' and 4''' and lamps 5, 5', 5'' and 5''' are alternately arranged by one-number. Thus, Duijneveldt fails to disclose this feature of the claimed invention" [Page 9], it is clear that the lamps 4, 4', 4'' and 4''' (even-number) and lamps 5, 5', 5'' and 5''' (odd-number) of Duijneveldt are alternately arranged more than one time, as shown in Figure 1B.

Claim Objections

4. Claim 8 is objected to because of the following informalities: "wherein a high voltage the AC voltage" is suggested to read as "wherein a high voltage of the AC voltage". Appropriate correction is required.
5. Claim 9 is objected to because of the following informalities: It is suggested that the underlined-parentheses be deleted below in the limitations:
 - Wherein the plurality of low voltage electrodes of odd-numbered (N-number) lamps are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered (N-numbered)

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- lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered (N-number) lamps are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered (N-number) lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
 - Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered (N-number) lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered (N-number) lamps [Figures 1A-B: (b, 8)] at the second side,
 - Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered (N-number) lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered (N-number) lamps [Figures 1A-B: (a, 9)] at the second side

Appropriate correction is required. It is noted that the N-number has been defined in the claim to refer to the number of alternately arranged numbers between the lamps, and not for the lamp themselves.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).

8. With regards to Claim 1, Van Duijneveldt discloses a backlight unit including:

- A lamp housing [Figures 1A-B: (6)] having a first side and a second side opposite the first side; and
- A plurality of lamps [Figures 1A-B: (4ⁿ, 5ⁿ)] respectively having a low voltage electrode [Figure 1A: (b)] and a high voltage electrode [Figure 1A: (a)] each at opposite ends of the lamp, the lamps arranged substantially parallel in the lamp housing,
- Wherein the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (5ⁿ)] are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (4ⁿ)] are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (b, 9)] at the first

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side and the plurality of low voltage electrodes of even-numbered lamps

[Figures 1A-B: (b, 8)] at the second side, and

- Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered lamps [Figures 1A-B: (a, 9)] at the second side.

9. With regards to Claim 2, Van Duijneveldt discloses the backlight unit further incorporating a diffusion plate [Figures 1A-B, 5: (7, 47)] located on the lamp housing [Figures 1A-B: (6, 46)]; and an optical sheet [Figure 5: (53, 51)] located on the diffusion plate.

10. With regards to Claim 3, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage electrodes [Figure 1A: (a)] of the lamps are respectively arranged in zigzag fashion.

11. With regards to Claim 4, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage [Figures 1A: (a)] electrodes of the lamps being alternately arranged by a number greater than 2.

12. Claims 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).

13. With regards to Claim 5, Van Duijneveldt discloses a liquid crystal display including:

- A back light unit including:

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- = A lamp housing [Figures 1A-B, 5: (6, 46)] having a first side and a second side opposite the first side;
- = A plurality of lamps [Figures 1A-B, 5: (4ⁿ, 5ⁿ, 44ⁿ, 45ⁿ)] respectively having a low voltage electrode [Figures 1A-B: (b)] and a high voltage electrode [Figures 1A-B: (b)] each at opposite ends of the lamp and arranged substantially parallel in the lamp housing; and
- A liquid crystal panel [Figure 5: (51)] disposed on the back light unit and having a plurality of liquid crystal cells arranged in matrix form,
- Wherein the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (5ⁿ)] are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (4ⁿ)] are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered lamps [Figures 1A-B: (b, 8)] at the second side, and

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- Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered lamps [Figures 1A-B: (a, 9)] at the second side.

14. With regards to Claim 6, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage electrodes [Figure 1A: (a)] of the lamps are respectively arranged in zigzag fashion.

15. With regards to Claim 7, Van Duijneveldt discloses the plurality of low voltage electrodes [Figure 1A: (b)] and the plurality of high voltage electrodes [Figures 1A: (a)] of the lamps being alternately arranged by a number greater than 2.

16. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).

17. With regards to Claim 8, Van Duijneveldt discloses a backlight unit including:

- A lamp housing [Figures 1A-B: (6)] having a first side and a second side opposite the first side; and
- A plurality of lamps [Figures 1A-B: (4ⁿ, 5ⁿ)] respectively having a low voltage electrode [Figure 1A: (b)] and a high voltage electrode [Figure 1A: (a)] each at opposite ends of the lamp, the lamps arranged substantially parallel in the lamp housing,
- Wherein the lamps have odd-numbered lamps [Figures 1A-B: (5ⁿ)] and even-numbered lamps [Figures 1A-B: (4ⁿ)] alternately arranged by N-number (where N is a positive integer more than 2),

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- Wherein the plurality of low voltage electrodes of odd-numbered lamps are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered lamps are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-numbered lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered lamps [Figures 1A-B: (b, 8)] at the second side,
- Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered lamps [Figures 1A-B: (a, 9)] at the second side, and
- Wherein the odd-numbered lamps with the N-number are disposed adjacent¹ to one another, and the even-numbered lamps with the N-number are disposed adjacent to one another.

18. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Van Duijneveldt (U.S. Patent 5,975,722 A).

¹ Adjacent – not distant, nearby; <http://www.merriam-webster.com/dictionary/adjacent>

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19. With regards to Claim 9, Van Duijneveldt discloses a liquid crystal display including:

- A back light unit including:
 - = A lamp housing [Figures 1A-B, 5: (6, 46)] having a first side and a second side opposite the first side;
 - = A plurality of lamps [Figures 1A-B, 5: (4ⁿ, 5ⁿ, 44ⁿ, 45ⁿ)] respectively having a low voltage electrode [Figures 1A-B: (b)] and a high voltage electrode [Figures 1A-B: (b)] each at opposite ends of the lamp and arranged substantially parallel in the lamp housing; and
- A liquid crystal panel [Figure 5: (51)] disposed on the back light unit and having a plurality of liquid crystal cells arranged in matrix form,
- Wherein the lamps have odd-numbered lamps [Figures 1A-B: (5ⁿ)] and even-numbered lamps [Figures 1A-B: (4ⁿ)] alternately arranged by N-number (where N is a positive integer more than 2),
- Wherein the plurality of low voltage electrodes of odd-numbered (N-number) lamps are disposed at the first side [e.g., Figures 1A-B: (b) connected to (9)] and the plurality of high voltage electrodes of odd-numbered (N-numbered) lamps are disposed at the second side [e.g., Figures 1A-B: (a) connected to (9)],
- Wherein the plurality of high voltage electrodes of even-numbered (N-number) lamps are disposed at the first side [e.g., Figures 1A-B: (a) connected to (8)] and the plurality of low voltage electrodes of even-

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- numbered (N-number) lamps are disposed at the second side [e.g., Figures 1A-B: (b) connected to (8)],
- Wherein a low voltage of an AC voltage is applied to the plurality of low voltage electrodes of odd-numbered (N-number) lamps [Figures 1A-B: (b, 9)] at the first side and the plurality of low voltage electrodes of even-numbered (N-number) lamps [Figures 1A-B: (b, 8)] at the second side,
 - Wherein a high voltage of the AC voltage is applied to the plurality of high voltage electrodes of even-numbered (N-number) lamps [Figures 1A-B: (a, 8)] at the first side and the plurality of high voltage electrodes of odd-numbered (N-number) lamps [Figures 1A-B: (a, 9)] at the second side, and
 - Wherein the odd-numbered lamps with the N-number are disposed adjacent² to one another, and the even-numbered lamps with the N-number are disposed adjacent to one another.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

² Adjacent – not distant, nearby; <http://www.merriam-webster.com/dictionary/adjacent>

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON M. HAN whose telephone number is (571)272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JMH/
April 26, 2009

Jason M Han
Examiner
Art Unit 2875

/Laura Tso/
Primary Examiner, Art Unit 2875